MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2021/2022

DIT5301 – SYSTEMS ANALYSIS AND DESIGN

(All sections / Groups)

4 OCTOBER 2022
2:30 p.m - 4.30 p.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of **3 pages**.
2. Answer **ALL** questions.
3. Write your answers in the **Answer Booklet** provided.

STRUCTURED QUESTIONS (50 MARKS)

QUESTION 1 [10 MARKS]

a) For each of the methods below, describe how you would apply the method for the development of a new online learning management system for a university:

i) Waterfall (2.5 marks)

ii) EXtreme programming (2.5 marks)

b) Assume that you are working as an IT officer at a university and you are given the task to purchase an online learning management system. Discuss all your considerations before arriving at a decision on any one off-the-shelf software to be purchased. (2.5 marks)

c) Explain five factors for a successful software reuse. (2.5 marks)

QUESTION 2 [10 MARKS]

a) Table 1 represents an IS project set of activities, its expected completion time and preceding activities.

Table 1

Activity	Preceding Activity	Expected Time (ET)	Earliest Completion Time (T_E)	Latest Completion Time (T_L)	Slack Time (ST)
A	-	5			
B	A	20			
C	B	10			
D	C	5			
E	D	3			
F	C	10			
G	F	7			
H	G	5			
I	E, H	2			
J	I	2			

i) Complete the table by calculating its earliest completion time (T_E), latest completion time (T_L) and slack time (ST) for each activity. (3 marks)

ii) What is the impact to the project if activity I is delayed for 1 week? (1 mark)

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iii) State the critical path for the project. (1 mark)

b) Provide any two factors that would need an improvement to an information systems project identification and selection. (2 marks)

c) Describe three advantages of bottom-up planning approach of an information systems planning. (3 marks)

QUESTION 3 [15 MARKS]

a) Explain tangible benefit and provide an example of tangible benefit. (2 marks)

b) Assuming monetary benefits of an information system project at RM175,000 per year, one-time costs of RM250,000, recurring costs of RM80,000 per year, a discount rate of 12 percent, and a three-year time horizon, calculate the following:

i) Net Present Value (NPV) of all benefits. (2 marks)

ii) Return on investment (ROI). (4 marks)

c) The ZE Wear is an online retailer of men's, women's and children's clothes. The company's marketing director, Mr Zarin, has determined that its marketing information system needs improvement. Mr Zarin feels that the company should begin sending out catalogues to its customers, keep better track of its customer's buying habits, perform target marketing, and provide a more personalized shopping experience for its customers. Several months ago, Mr Zarin submitted a systems service request (SSR) to the company's steering committee. The committee unanimously approved this project. You have been assigned to the project which is in its design phase now. You are responsible for overseeing the designing of forms and reports, interfaces, and dialogues required by the new system.

i) Provide three guidelines that you can use to design a customer order form for this system. (3 marks)

ii) Describe two devices that are suitable for interacting with this system. Justify your answer. (2 marks)

iii) Explain any two common errors that you should avoid when designing the interface and dialogues of this system. (2 marks)

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QUESTION 4 [15 MARKS]

a) Answer the following questions based on Figure 1:

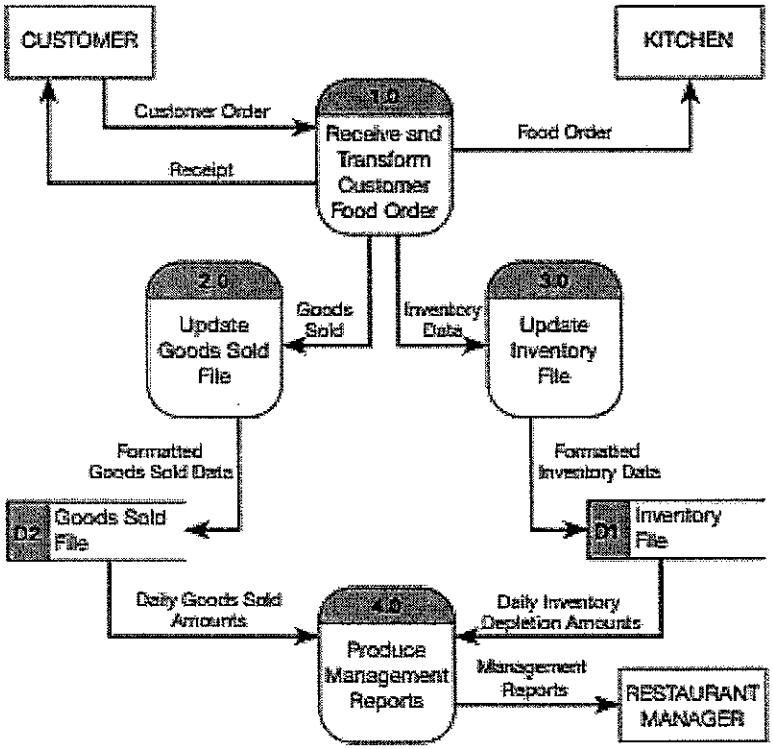

Figure 1

i) Describe the function "Produce Management Reports" of the system by identifying relevant data flows, data stores and sources/sinks involved in the process. (3 marks)

ii) State a relationship with cardinalities that can occur in an Entity-Relationship diagram between Customer and Order entities of the system where customers are allowed to register accounts prior to placing their first order. (2 marks)

b) How can you test your software applications? List and explain five different types of tests. (5 marks)

c) List and describe five factors that influence the cost of maintaining an information system. (5 marks)

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